

changes in even as many as 30 districts are, in my view, not needed to fully remedy the constitutional infirmities in the eleven unconstitutional districts, thus rendering DI7002 and the NAACP plan also highly problematic.

2. Second, four of these plans change districts that are not adjacent to the unconstitutional districts. In particular, both Plaintiffs Plan A and Plaintiffs Plan B change both district 65 and district 56; while the NAACP plan changes district 65, and DI7003 changes district 21. My own examination of alternative mapping demonstrate that reconfiguration of these additional districts was not necessitated by the need to address the constitutional infirmities in the eleven districts found to be unconstitutional. Even were this the only flaw, I cannot recommend a plan with this flaw, and so for this reason alone I cannot recommend DI7003, Plaintiffs Plan A, Plaintiffs Plan B, or the NAACP plan.

In sum, since four of the five submitted plans make changes in some districts that did not need to be changed in order to remedy the constitutional violation, I cannot recommend DI7003, Plaintiffs Plan A, Plaintiffs Plan B, or the NAACP plan to the Court, and the remaining plan, DI7002, by changing 30 districts is also highly problematic. Moreover, each of the plans has other major flaws.

Another indicator of a failure to create a narrowly tailored remedy is redrawing of remedial districts with a greater than 60% black voting age population, without

evidence that such a high black percentage was needed to avoid vote dilution. Even if having some districts which exceed 60% black voting age population were the only problem with a submitted remedial plan, because it is a clear signal of a failure to address the need for a narrowly tailored remedy, in the absence of evidence that such a configuration was needed to avoid vote dilution, or compelled by geographic or demographic factors, I cannot recommend plans which have this feature to the Court. My own illustrative configurations, and the analyses I have done of these configurations, indicate that it not necessary to avoid vote dilution to drawn maps in which any of the redrawn districts exceed 55% black voting age population, with the highest black voting age population in any district in any of my modules being 54.92% (district 89 in Norfolk Illustrative Module 1C), and the black voting age population in district 89 in the other two illustrative modules in Norfolk at 54.92%.

Similarly, there are simply no good reasons to increase the African-American voting age population in any of the unconstitutional districts above what is found in the 2011 Enacted map. Thus, I cannot recommend to the Court any plan that increases the African-American voting age population in any of the unconstitutional districts above what is found in the 2011 Enacted map.

(a) The HB7002 plan offered by Defendant-Intervenors has 6 of its 11 redrawn unconstitutional districts still with black voting age population above 55%, and two of these have BVAP at or above 60%, and it increases black voting age population in

some of the six districts in it with BVAP above 55% as compared to the 2011 Enacted plan.

(b) The HB7003 plan offered by Defendant-Intervenors has 1 of its 11 redrawn unconstitutional districts with black voting age population above 55%, but that district (district 92) is at 57.26%.

(c) The NAACP plan has 1 of its 11 redrawn unconstitutional districts with black voting age population above 55%, but that district (district 92) is at 57.6%.

(d) Plaintiffs plan A has 3 of its redrawn unconstitutional districts still with a greater than 55% black population -- districts 63 (55.8%), 70 (58.5 %), and 92 (58.2 %), and it increases black voting age population in district 70 as compared to the 2011 Enacted plan.

(e) Plaintiffs plan B also has 3 of its redrawn unconstitutional districts still with a greater than 55% black population (districts 63 and 74, and 92), and it increases black voting age population in district 74 as compared to the 2011 Enacted plan (59.8% vs. 57.2%).

In my view, from a narrow tailoring perspective, there would need to be a clear

justification for remedial districts with a black population above 55%, or ones that increase black population in an unconstitutional district over what it had been in the 2011 Enacted map. This is especially problematic when there is more than one district with a black population above 55%. Because a Court-adopted plan must be narrowly tailored, based solely on the black voting age percentages in the reconfigured remedial districts discussed above, I clearly cannot recommend either of Plaintiffs remedial plans A or B, or HB7002 for adoption by the Court, and I find the two others problematic for this reason.

3. A third distinct indicator of a failure to create a narrowly tailored remedy is redrawing of remedial districts (and adjacent redrawn districts) in a way that unnecessarily fragments counties and other pre-existing political units. In general, traditional districting criteria would lead to the creation of districts that are centered in particular counties and do not involve pieces (especially multiple pieces) of multiple counties, and which keep counties and other administrative units whole to the extent feasible, except as required by population or geographic considerations or concern to avoid vote dilution. My own illustrative configurations and the analyses I have done of these configurations indicate that such geographic or population constraints do not apply, nor is it necessary to avoid vote dilution by redrawing maps with large numbers of county splits. Even if having a large number of unnecessary county splits were the only problem with a submitted remedial plan, because it is a clear signal of a failure to address the need for a

narrowly tailored remedy, in the absence of evidence that such a configuration was needed to avoid vote dilution or compelled by geographic or population factors, I cannot recommend plans that have this feature to the Court.⁵¹

The 2011 Enacted Map is one with a very high number of county splits. The number of county splits is reduced in all five of the submitted remedial maps. Nonetheless, looking at the treatment of particular counties, such as Richmond, the number of county splits in those plans is excessive in my view in terms of a narrowly tailored remedial plan drawn according to traditional districting criteria, and cannot be justified by the need to avoid pairing incumbents.

While I have generated data tables that indicate county splits in each of the remedial plans in the three sets used for the previous data tables (the eleven unconstitutional districts, the ten districts that are changed in all plans, and the

⁵¹ I should note that the more districts one changes from their configurations in the 2011 Enacted map, the easier is, *ceteris paribus*, to eliminate unnecessary county splits by reconfiguring all the districts that contain portions of the county in a way more sensitive to traditional districting criteria. Because the illustrative maps I have provided have sought to minimize the number of districts that are changed, they also contain more county pieces than would be the case were the same principles of traditional districting applied in those maps be applied to a wider geographic area encompassing changes in more districts. If we look only at the districts actually changed in my illustrative maps, these maps nonetheless perform better, on average, vis-à-vis the criterion of minimizing county splits, than any of the remedial maps. My illustrative remedial maps perform especially well with respect to this criterion vis-à-vis the eleven unconstitutional districts. In particular, as indicated in the Report, plans can be created based on my illustrative modules that allow for nine of the eleven unconstitutional districts to lie within a single county, and this allows for reduction in the number of splits of that county.

districts that are changed in a particular plan but not in all plans), because there are compelling reasons to reject each of remedial plans before we get to a county split comparison and because of space considerations, I have not bothered to reproduce those tables in this Appendix. Rather I will simply focus on excessive splits in some counties in each submitted remedial map. In the data reported below I only report the total splits for those districts that were changed in the plan.⁵² Here a county split is counted when some portions of a county are contained in a district. I treat the issue of fracking, i.e., where the pieces of that county in the given district are discontinuous from one another and thus might be counted as more than a single piece, as a separate issue.

(a) In the 30 districts redrawn in this remedial map, the D17002 plan splits Chesterfield so that it has pieces in 7 of the changed districts. Even though Chesterfield, too, is a large county, this number of splits is completely unnecessary. And, Norfolk is split in the redrawn districts this plan in 6 pieces, again an unnecessary number of county splits. And Richmond is split in 5 pieces, again an unnecessary number of county splits. And Henrico is split into 6 districts, again an unnecessary number of splits.

⁵² Thus there may well be county splits that are not being tallied if those are in districts that were left unchanged from their configuration in the 2011 Enacted map. This tallying process is different from what is provided in the body of the Report for my illustrative modules, where information on unchanged districts in the geographic region of the unconstitutional district(s) is also being reported.

(b) In the 32 districts it has redrawn in its remedial map, the DI7003 plan in its changed districts splits Chesterfield so that it has pieces in 7 redrawn districts. Even though Chesterfield, too, is a large county, this number of splits is completely unnecessary. And Richmond is split in 5 pieces, again an unnecessary number of county splits. And Henrico is split into 7 districts, an unnecessary number of splits. And, Norfolk is split in this plan in 6 pieces, a clearly unnecessary number of splits.

(c) In the 30 districts it has redrawn in its remedial map, the NAACP plan splits Chesterfield so that it has pieces in 8 districts. Even though Chesterfield is a large county, this number of splits is completely unnecessary. And Richmond is split in 5 pieces, again an unnecessary number of county splits. However, Norfolk in the NAACP map is split into only 4 districts, fewer than in Defendant-Intervenors' plans, and it is otherwise generally as good or better with respect to county splits as Defendant-Intervenor plans.

(d) In the 33 districts it has redrawn in its remedial map, Plaintiffs plan A splits Henrico into 6 districts. However, Richmond is split in only 4 pieces in Plaintiffs' Plan A, fewer than in the Defendant-Intervenor plans.

(e) In the 32 districts it has redrawn in Plaintiffs plan B, Richmond is split in 5 pieces, again an unnecessary number of county splits. Henrico, however, is split into 5 districts, fewer than in the Defendant Intervenor plans.

4. The standard way to count county splits is simply to ask whether or not a county has population located within a given district and count the number of districts for which this is true. That is the method employed above and in the body of this Report, and in the customary map analysis reports produced by legislative staff of the Virginia Chamber of Delegates. But, as I reviewed the 2011 Enacted map I realized that, in some districts, including four of the eleven unconstitutional districts (63, 70, 90 and 95), one in each of the four geographic areas of the state identified above which contained one or more legislative districts found to be unconstitutional, the 2011 Enacted plan had a feature that, in my view, should not exist in any court-ordered map. I therefore checked for the presence of this feature in all the proposed remedial maps.

The feature in question is what I have labeled “fracking” (in parallel with other terms in the redistricting literature such as “cracking,” “packing” and “stacking”). *Fracking* occurs when the county population found within a given district consists of two or more discontiguous pieces. Absent a situation in which a political jurisdiction is legally defined as having discontiguous pieces, the presence of fracked counties shows what I (and I believe all redistricting specialists) would regard as either a poorly constructed map, or a signal of possible intended racial (or partisan or incumbent protection) gerrymandering. It involves intended manipulation of county boundaries in a way that violates traditional principles of districting in

failing to minimize unnecessary splits of the populations contained within pre-existing political units. By simple geographic logic there can never be a population-based reason for cracking, since any crack can be remedied by simply swapping equal populations from the cracked county across districts so as to eliminate the cracking.

If a proposed remedial map contained cracking, I treated that fact as a sufficient reason not to recommend that remedial plan to the Court, since such a feature would indicate a poorly constructed map with a feature that a court seeking to use traditional districting criteria to the extent feasible would not wish to order into effect. A crack could also serve as a signal of possible gerrymandering intent, and even were the crack to be argued to be directed toward incumbent protection, it would need to be demonstrated that the cracking did not interfere with the drawing of a plan in a constitutional fashion.

District 70 in DI7002 cracks Richmond County; similarly, district 70 in DI7003 also cracks Richmond County. For that reason alone, I cannot recommend that map to the Court. Because identifying cracks is a time consuming process, and because there were compelling reasons to reject the other submitted remedial maps because of features such as the total number of districts reconfigured in each, I did not pursue further my search for cracking in the remedial maps.

5. Compactness: On average, of the five submitted plans, if we look only at the unconstitutional districts, all plans are as good or better than the Enacted Map with respect to both Polsby-Popper and Reock scores. While there are differences in compactness scores across the five submitted remedial plans, with Plaintiffs plans A and B being as good or best with respect to both criteria, and DI7003 being clearly the worst with regard to one of them, I do not regard the differences across the five plans as large enough to justify a clear superiority of one plan over another with respect to compactness, since all are superior to the 2011 Enacted Map on both criteria.

Overall comparisons: None of the five plan is clearly superior to all other plans with respect to all of the relevant criteria, but most importantly:

(a) Three of the five plans fail a narrow tailoring test in terms of changing more districts than need to be changed to remedy constitutional infirmities, with four failing a narrow tailoring test by changing the boundaries of districts that are not adjacent to any of the unconstitutional eleven.

(b) All five plans fail a narrow tailoring test in terms of avoiding the perpetuation of at least one district with a non-trivially greater than 55% black voting age population without evidence that such as percentage is needed to avoid minority vote dilution; and some of the plans (Plaintiffs A and Plaintiffs B, DI2002) actually

increase black voting age population in some of the redrawn unconstitutional districts from what it was in the 2011 Enacted plan. And some of the plans (Plaintiffs A and Plaintiffs B, DI2002) contain more than one district with a black voting age population above 55%.

(c) None of the five plans is narrowly tailored with respect to preservation of county boundaries. Each exhibits an excessive number of avoidable county splits, with a particular issue being the degree to which some large counties are fragmented. Moreover, DI7002 and DI7003 exhibit fracking in district 70.

Thus, each of the plans fail a narrow tailoring test with respect to one or more of the narrow tailoring tests identified above. Hence, my recommendation is that none of the five plans be adopted by the Court, since they fail to offer a narrowly tailored remedy.

Nonetheless, as I indicated earlier, since each of these plans is better than the Enacted Plan with respect to at least one traditional districting criteria, I sought to carefully review key geographic elements of each of these proposed remedial plans with the goal of identifying features of each that might usefully be incorporated in whole or in part in the illustrative remedy maps that I offer to the Court. My careful review of the geography and demography of the state and of the key features of proposed remedial plans by all of the parties, has allowed me to offer to the Court

a modularized approach to effectuating a constitutional map in which I present to the Court a set of options for different geographic areas of the state that resolve tradeoffs among traditional redistricting criteria in slightly different ways.

APPENDIX B

Comments on the Responses to the December 7, 2018 Report of the Special Master
that were Filed on December 14, 2018.

1. I have read and reviewed Responses to the December 7 Report of the Special Master that were filed on December 14 by the Plaintiffs, the Defendant, the Defendant-Intervenors, the Virginia State Conference of NAACP Branches (which I henceforth simply refer to as the NAACP), and the Princeton Gerrymandering Project.

2. The Plaintiffs, the Defendant-Intervenors, and the NAACP each reiterate that their preferred solution is for the Court to adopt a plan they have previously offered to the Court as a remedy. For the multiple reasons already elaborated on in my December 7 Report and the Appendix thereto, I cannot recommend any of those previously submitted plans for adoption by the Court. Nothing in any of the submitted briefs affects my previous reasons for not recommending adoption of these plans.

3. Nothing that is said in any of the responses received on December 14 has convinced me to make new recommendations to the Court for illustrative map modules. I do expect, however, that whatever plan the Court ultimately does adopt will require some minor technical corrections. For example, if the Court were to adopt some combination of my illustrative modules, I would expect to review that illustrative map and seek to reduce still further the already low number of VTD splits for the final map. But such technical corrections, or any other form of improvements to submitted maps or illustrative modules, can wait until I have been

given further specific instructions by the Court as to final map drawing after January 10. This has allowed all parties to respond with comments on my illustrative modules in the form that these illustrative modules have been specified in my December 7 Report. As noted in that Report and above, with the aid of legislative staff, once I have the Court's instructions as to how to proceed, I expect to be able to offer the Court a final map in a timely fashion.

4. The Defendant offers no map of its own and Defendant's Response of December 14 indicates that the Court's choice of any of the illustrative modules would be acceptable as a constitutional remedy. For reasons specified in its Response, the Defendant regards each illustrative module as fully satisfying the narrowly tailoring standard needed for a court-ordered remedy and trusts the Court to choose the most appropriate final map. For each of the other groups to file Responses on December 14, I have assessed preferences among the various illustrative modules based on my reading of their Response Briefs to the best of my ability, using in all cases the labels for the modules given in my December 7 Report.⁵³

⁵³ I apologize to the Court and to all parties that, for the Norfolk area, I had inadvertently generated confusion with respect to the ability of parties to express relative preferences among the three illustrative modules for Norfolk, because the labeling of Norfolk 1A and Norfolk 1C appears to have been reversed in the shape files relative to the correct labeling of these illustrative modules on my Report. In this Appendix I will use the same labeling for the three Norfolk illustrative modules as in my December 7 Report, and in the body of the text above, since all the tables in that Report match with this labeling, and this is what I regard as the correct labeling. In this correct labeling, Norfolk 1A is the plan which changes the most districts in the Norfolk area; Norfolk 1C is the plan that changes the fewest districts in the Norfolk area; and Norfolk 1B is intermediate between the two, changing one

5. In the event that the Court does not accept one of the Plaintiffs' proposed remedial maps, I believe that Plaintiffs indicate that they would prefer the Court to adopt Richmond Illustrative Module 1A, Petersburg Illustrative Module 2, Peninsula Illustrative Module 2, and Norfolk Illustrative Module 1A,⁵⁴ with whatever further changes, might be directed by the Court.

6. In the event that the Court does not accept the remedial map proposed by the NAACP, my reading of the NAACP Response indicates that they would prefer the Court to adopt Richmond Illustrative Module 1B, Petersburg Illustrative Module 2, Peninsula Illustrative Module 2, and Norfolk Illustrative Module 1B,⁵⁵ with whatever further changes, might be directed by the Court.

7. In the event that the Court does not accept Defendant-Intervenors 7002 as a remedial map, Defendant-Intervenors provide no preference among any of the illustrative modules provided to the Court by the Special Master.

more district than Norfolk 1C and one less district than Norfolk 1A. Labeling was an issue only for two of the three Norfolk illustrative modules, and was not an issue in the other regions of the state. Since only the naming of two of the three Norfolk modules is affected, and to the best of my knowledge, the data on the shape files is correct, this should not impact the ability of parties to carry out analyses of any of these modules or to propose improvements in them.

⁵⁴ See footnote 1 re the labeling of illustrative modules in the Norfolk area.

⁵⁵ See footnote 1 re the labeling of illustrative modules in the Norfolk area.

8. The Response Brief filed on December 14 by the Princeton Gerrymandering Project, a non-partisan and academically-based group, does not offer a map to be given consideration by the Court. The illustrative map they discuss is simply an illustration of what might be possible were no attention paid to avoiding the pairing of incumbents,⁵⁶ and no attention paid to limiting the number of redrawn districts in a remedial map.⁵⁷ If illustrative modules proposed by the Special Master were to be ordered by the Court, my reading of their response indicates that they would prefer the Court to adopt Richmond Illustrative Module 1B, Petersburg Illustrative Module 2, Peninsula Illustrative Module 2, and Norfolk Illustrative Module 1A,⁵⁸ with whatever further changes, might be directed by the Court.

⁵⁶ As is noted in the December 14 Response Brief by the Princeton Gerrymandering Project: “One key difference in the methods of construction between the Princeton Plan and the plans drawn by Prof. Grofman is the consideration of incumbency: while Prof. Grofman sought to avoid pairing incumbents without degrading other criteria, the creators of the Princeton Plan neither had access to such information” (footnote 2). (Here I assume that the word ‘neither’ is a typo. The clear meaning of the quote above is that the Princeton Gerrymandering Group did not have access to incumbency location information.) Because of this lack of information about incumbencies the Princeton Gerrymandering map pairs many incumbents in a single district: (91 and 92), (93 and 95), (83 and 85), (78 and 81), (63 and 66), (70 and 71), and (72 and 74), and even has a triplet of incumbents in a single district (68-69-73), and with this excessive number of incumbents paired it is not a candidate for being considered as a possible remedy in this case. Still, it is useful to examine for ideas the features of this fully incumbent blind plan drawn along traditional districting lines by a sophisticated group of mapmakers.

⁵⁷ They redraw 33 districts.

⁵⁸ See footnote 1 re the labeling of illustrative modules in the Norfolk area.

9A. If we compare the evaluations of the Special Master's illustrative modules across the various Response Briefs, and we disregard each group's primary support of its own plan or plans, there appears to be substantial agreement on two of the illustrative modules. The Plaintiffs, the NAACP, and the Princeton Gerrymandering Project all endorse Petersburg illustrative module 2 and Peninsula illustrative module 2 in preference to any other of my illustrative modules within those two geographic regions, while the Defendant (with no stated preference among the modules within any given geography, but clearly expressed support for whichever of the illustrative modules the Court might choose) would also accept the choice of these two modules. That leaves only the Defendant-Intervenors, but they have expressed no preference among modules, simply rejecting all of them.

9B. If one of my illustrative modules for Norfolk were to be adopted by the Court, based upon this reading, and using the labels for the illustrative modules given in my December 7 Report, there is no consensus among the groups that filed Responses on December 14 with respect to preferences for the Norfolk area when those preferences are limited to comparisons among my various modules for that geographic region. I believe that Plaintiffs and the Princeton Gerrymandering Project have expressed a relative preference for what my December 7 Report has labeled Norfolk 1A, i.e., for the illustrative module that changes the most districts in that region, while the NAACP has expressed a relative preference for what my December 7 Report labeled as Norfolk 1B, i.e., for what is the intermediate module

in terms of number of districts changed. Defendant-Intervenors express no relative preferences across illustrative modules for Norfolk and wish to see none of them adopted, while Defendant will accept any of them. Thus, it is my belief that there is no support for adoption of Norfolk illustrative module 1C among those parties who have expressed a relative preference among the Norfolk modules.

9C. If the Court were to adopt one of my illustrative modules for the Richmond area, both the NAACP and the Princeton Gerrymandering Project prefer Richmond Illustrative Module 1B as their most preferred module among this set. Plaintiffs, in contrast, express a preference among the Richmond illustrative modules for Richmond Illustrative Module 1A. Defendant-Intervenors express no preferences across these illustrative modules, rejecting all of them; while Defendant will accept either of them.

9D. In my comments above, I am merely summarizing statements in the various Responses to the best of my present knowledge. I do not express a preference among the illustrative module options in any of the four regions. My view has consistently been that it is my responsibility as Special Master to offer options to the Court, while it is only the Court that has a mandate to choose the configuration that will be used for a court-ordered map that will remedy the unconstitutionality in these eleven districts in the narrowly tailored fashion appropriate for a court-drawn map

and to make the decisions as to how best to balance off tradeoffs among competing legal and practical desiderata.

Now I turn to more specific comments in the various Responses about the illustrative modules and/or the map drawing criteria used for them.

10. The Defendant affirmed the appropriateness of the criteria I used to craft my illustrative modules, involving “equal population districts,” drawn according to “traditional districting principles” in a fashion that “only considered race after traditional districting criteria ha[d] been satisfied” and then “only for [the] purposes of seeking to assure that there is no violation of the 14th Amendment’s Equal Protection provision vis-à-vis changes in the racial composition of the unconstitutional districts that might have inadvertently created racial vote dilution” (December 14 Response Brief at p. 1). As noted earlier, the Defendant is prepared to accept any of the illustrative modules drawn by the Special Master as a basis for remedial map drawing in that geographic area of the state.

11. In their December 14 Response Brief, while Plaintiffs express clear preferences among my illustrative modules vis-a-vis each of the regions of the state where Challenged Districts are located, and give clearly stated reasons for those preferences, Plaintiffs agree that the illustrative modules that I have submitted remedy the unconstitutional racial gerrymanders of the Challenged Districts. Plaintiffs reviewed the changes in African-American population in the illustrative

modules' redrawing of the unconstitutional districts, including that in the district with lowest black voting age population (40.23%). Plaintiffs agree with my conclusion that each of these redrawn districts would provide African-American voters with an equal opportunity to elect candidates of choice (see pp. 2-7).

11A. However, Plaintiffs strongly make the point that they do not believe that the changes in districts 72 and 73 in Richmond illustrative module 1B are warranted. They point out these changes are not needed for the constitutional redrawing of any of the eleven unconstitutional districts.⁵⁹

11B. Plaintiffs, while they do not differ with the criteria I identify as traditional redistricting criteria, and they, like me, acknowledge that drawing a narrowly tailored remedial map requires a set of tradeoffs, also strongly express the view that there was no need to restrict the changes in the Enacted map to as few as 26 (or 21) districts. Here I would simply note that, as explained in much more detail in the

⁵⁹ I agree with Plaintiffs characterization of the extensive changes made in districts 72 and 73 in my illustrative Richmond module 1B as not being required to implement a constitutional map vis-à-vis the eleven challenged districts, nor (as they correctly point out) did I ever suggest anything to the contrary in my December 7 Report. I indicated in my December 7 Report the unique reasons why I included this option for the Court, namely that the differences between this module and Richmond module 1A had been done to reflect a change in incumbent home location in this part of the state and, in the process, to substantially improve compactness for the district (district 72) which is the least compact district in the state with respect to Polsby-Popper compactness (with a P-P value of .08). Whether Richmond illustrative module 1B makes changes that go beyond the Court's mandate, or should be ruled out for other reasons is, of course, for the Court to decide.

text above, I took my charge to be one of drawing a narrowly tailored plan, and I took one feature of such narrow tailoring to be limiting the number of districts changed.

11C. “The Virginia NAACP believes that each of the illustrative modularized maps submitted to the Court by Dr. Grofman (hereinafter, the “Grofman Plan”) offer improvements upon the 2011 Enacted Plan with regard to adherence to traditional redistricting criteria and eliminating the arbitrary 55% BVAP threshold set by the General Assembly in 2011 for districts which elected black representatives—an unjustified threshold which led to the unconstitutional packing of black voters” (NAACP December 14, 2018 Response Brief, p.1). They also agree that all my illustrative modules are ones that only took race into account “after traditional districting criteria ha[d] been satisfied” and “only for the purpose of assuring that there was no racial vote dilution in the reconfigured unconstitutional districts” (NAACP December 14 Response Brief, p.2; citing to Grofman December 7, 2018 Report at p. 11).

11D. However, the NAACP Response Brief (p. 1) also takes the view that my illustrative modules do not “go far enough in remedying the numerous unconstitutional racial gerrymanders identified in the 2011 House of Delegates plan.” The December 14 NAACP Response Brief notes (p. 2) that “the Virginia NAACP devised a plan that, in the process of fully remedying this extreme harm [in the unconstitutional districts], resulted in the natural formation of five additional districts where black voters will either likely have the opportunity to elect their

candidate of choice, or have their influence over the election outcomes free from artificial diminishment. Specifically, as a consequence of fully unpacking black voters, two legislative districts saw increases in BVAP from the low 20s to the low 40s, thus providing black voters with a real opportunity to elect their candidate of choice in those districts.”⁶⁰ The two districts in the NAACP with black voting age population above 40% that are not among the 12 districts that were majority minority in the Enacted map are districts 62 and 76. And “additional opportunities for people of color,” are identified as 27, 94, and 85 (see p. 22 of the NAACP November Brief).

However, focusing only the comparison districts emphasized above by the NAACP exaggerates the differences between their map and my maps, when looked at in terms of black voting age population percentages in their map as to compared to the illustrative modules I have drawn. In fact, an argument can be made that the positive impact on minority representation might actually be greater in my 26 district illustrative map than in the NAACP map.⁶¹

⁶⁰ The NAACP Response Brief goes on to assert (p.2) that “This result helped restore black voters to the position they would have held had they not been unlawfully segregated and packed in the 2011 Enacted Plan.”

⁶¹ This illustrative map is the combination of my illustrative modules involving exactly 26-districts that was used for analysis purposes by the Pennsylvania Gerrymandering Project in their December 14, 2018 Response Brief. The other map I will refer to is the combination of my illustrative modules involving exactly 21-districts the form that was used for analysis purposes by the Pennsylvania Gerrymandering Project in their December 14 Response Brief.

I show below comparisons between the NAACP map, my 21-district change illustrative map, and my 26 district change illustrative map for the 30 districts that are changed in the NAACP map. If a district changed in the NAACP map was not changed in my map I simply report the black voting age population in the 2011 Enacted map. In this way we are comparing 30 districts in the NAACP map to the same 30 districts in different maps. If we count the number of districts other than those found unconstitutional in the 20 to 40% black voting age category used for comparison purposes by the NAACP in their December 14 Response Brief, we find that there are 8 such districts in the NAACP map, 8 such districts in my illustrative 21-district map, and 11 such districts in my illustrative 26-district map, so either there is no real difference across maps with respect to this categorization, or the 26 district illustrative module is superior with respect to this configuration.⁶² On the other hand, if we look at districts adjacent to the unconstitutional districts that have been changed to now be over 40%, there are two such districts in the NAACP map, 62 and 76, and only one in my illustrative map, District 76.⁶³

⁶² There are seven such districts in the 2011 Enacted Map.

⁶³ There are no such districts in the 2011 Enacted map.

Black Voting Age Percentage Comparison Across Different Proposed or Illustrative Remedial Maps (unchanged in gray)

<div> <div>↑</div> <div>HIGHEST BVAP</div> </div>	District	NAACP	SM21	SM26	ENACTED
	63	58.52%	51.81%	47.47%	59.53%
	92	57.60%	53.87%	53.87%	60.72%
	75	54.60%	55.43%	52.45%	55.43%
	89	52.12%	54.98%	54.92%	55.46%
	95	50.67%	47.48%	47.36%	59.97%
	69	50.37%	54.38%	54.38%	55.19%
	71	49.95%	54.01%	54.01%	55.35%
	80	49.72%	51.38%	51.38%	56.30%
	77	47.51%	47.03%	40.23%	58.78%
	70	46.49%	52.29%	52.29%	56.37%
	90	45.97%	48.91%	41.93%	56.59%
	62	43.83%	29.23%	27.22%	24.56%
	76	42.53%	42.40%	42.89%	25.14%
	74	42.49%	54.37%	54.37%	57.24%
	79	32.52%	32.00%	31.46%	29.46%
	85	29.40%	22.32%	21.29%	18.93%
<div> <div>←</div> <div>LOWEST BVAP</div> </div>	94	29.34%	16.79%	31.13%	21.02%
	27	25.51%	18.44%	18.44%	18.44%
	64	24.84%	24.24%	27.38%	24.24%
	84	22.99%	20.45%	20.45%	20.45%
	91	22.42%	32.52%	32.52%	19.61%

HIGHEST BVAP ↑

District	NAACP	SM21	SM26	ENACTED
63	58.52%	51.81%	47.47%	59.53%
92	57.60%	53.87%	53.87%	60.72%
75	54.60%	55.43%	52.45%	55.43%
89	52.12%	54.98%	54.92%	55.46%
95	50.67%	47.48%	47.36%	59.97%
69	50.37%	54.38%	54.38%	55.19%
71	49.95%	54.01%	54.01%	55.35%
80	49.72%	51.38%	51.38%	56.30%
77	47.51%	47.03%	40.23%	58.78%
70	46.49%	52.29%	52.29%	56.37%
90	45.97%	48.91%	41.93%	56.59%
62	43.83%	29.23%	27.22%	24.56%
76	42.53%	42.40%	42.89%	25.14%
74	42.49%	54.37%	54.37%	57.24%
79	32.52%	32.00%	31.46%	29.46%
85	29.40%	22.32%	21.29%	18.93%
21	21.94%	23.86%	23.86%	23.86%
78	18.24%	17.14%	16.85%	17.14%
66	17.42%	25.81%	32.31%	16.06%
68	16.91%	7.25%	7.25%	7.25%
72	16.53%	15.38%	19.49%	13.40%
83	16.23%	15.12%	23.10%	15.12%
65	15.56%	14.63%	14.63%	14.63%

↑ HIGHEST BVAP	District	NAACP	SM21	SM26	ENACTED
	63	58.52%	51.81%	47.47%	59.53%
	92	57.60%	53.87%	53.87%	60.72%
	75	54.60%	55.43%	52.45%	55.43%
	89	52.12%	54.98%	54.92%	55.46%
	95	50.67%	47.48%	47.36%	59.97%
	69	50.37%	54.38%	54.38%	55.19%
	71	49.95%	54.01%	54.01%	55.35%
	80	49.72%	51.38%	51.38%	56.30%
	77	47.51%	47.03%	40.23%	58.78%
	70	46.49%	52.29%	52.29%	56.37%
	90	45.97%	48.91%	41.93%	56.59%
	62	43.83%	29.23%	27.22%	24.56%
	76	42.53%	42.40%	42.89%	25.14%
	74	42.49%	54.37%	54.37%	57.24%
	79	32.52%	32.00%	31.46%	29.46%
	85	29.40%	22.32%	21.29%	18.93%
	81	14.35%	19.05%	25.34%	18.60%
	73	7.63%	13.55%	9.32%	13.55%

Since the black voting age population percentages in the various remedial versions of district 76 are essentially indistinguishable between my illustrative maps and the NAACP map (42.5% in the NAACP plan, 42.4% in my 21-district illustrative map, and 42.9% in my 26 district illustrative map), and since my illustrative maps do as good or better in creating/maintaining districts that are in the 20% to 40% black voting age population range, the argument for why the NAACP map should be preferred in racial representation terms seems to come down to a claim that I should have drawn district 62 with above a 40% level of black voting age population.⁶⁴ In my 21-district illustrative map and my 26 district illustrative map, district 62 is drawn with substantial minority population (at 27.2% and a 29.2% black voting age population level, respectively) -- values somewhat higher than what is found in the 2011 Enacted map (24.6%).

The reason that, in none of my modules, is district 62 drawn as a district with an above 40% black population is straightforward. As the NAACP has correctly explained, the exploratory and illustrative maps that I drew in the process of proposing narrowly tailored remedial plans to the Court addressed the unconstitutional violations in the eleven districts that were found to be

⁶⁴ It was not clear to me whether the NAACP is asserting that, as a matter of law, under Section 2 of the Voting Rights Act or the 14th Amendment, it was obligatory for me to have created a seventh (new) minority opportunity districts in the Richmond-Petersburg area, even though that district did not have a black voting age majority or a showing that such a seventh black voting age majority district could be drawn. If that is the claim, then it is a legal question for the Court.

unconstitutional. The changes in my various modules in black population levels in districts not found to be unconstitutional but adjacent to redrawn unconstitutional districts were limited to those that resulted simply from the geographic spillovers incidental to the seeking of a narrowly tailored line drawing that would remedy constitutional infirmities in the eleven unconstitutional districts.⁶⁵

While the NAACP version of district 62 is a district which contains all of Hopewell City, it is no longer centered in Chesterfield. In the 2011 Enacted map, 62% of the population in district 62 is from Chesterfield (49,193) while in the NAACP map there only 3,961 people from Chesterfield, i.e., around 5% of the district, and the center of gravity of the district has been completely shifted to Henrico, which provides about 56% of its population. In contrast, district 62 in my illustrative modules it still very much a Chesterfield based district, with between 42,075 and 52,051 people from that County (53-65% of the district).

While I have made extensive changes in some unconstitutional districts for purposes of remedying the unconstitutionality in a fashion consistent with

⁶⁵ The only exceptions to the observation that changes in districts adjacent to unconstitutional districts stem entirely from changes in the unconstitutional districts (while taking into account traditional districting criteria, and avoidance of incumbency pairing) are the changes made in districts 72 and 73 in illustrative Richmond module 1B. These changes are discussed above and in my December 7 Report, where I have made explicit the reasons why I offered a module with such changes to the Court -- and why I regarded this as a unique case. My changes in districts 72 and 73 in illustrative Richmond module 1B did not require changes in the redrawn Richmond area unconstitutional districts.

traditional districting principles, and this has had spillover consequences that has also led to extensive changes for some adjacent districts, I have never made extensive changes in adjacent districts solely to improve the racial percentages in those districts. No matter my personal views as a citizen, as an agent of the Court I do not believe that it falls within my task of crafting a narrowly tailored remedy for the constitutional infirmities in the eleven unconstitutional districts to make such extensive changes in an adjacent district without these being ancillary spillover effects from my reconfiguring of unconstitutional districts.

11E. The NAACP December 14 Response Brief also objects to what they describe as the limited changes made in the Norfolk modules in district 89 in terms of black voting age percentage. They assert (p. 5) that the difference in a “mere hundreds of people does not fundamentally alter the racially-segregating effects of the unconstitutional district.” But this is a mischaracterization of the degree to which district 89 has been changed, since the configuration of District 89 in my illustrative maps shifts about 35% of the population in this district from what was found in the 2011 Enacted map. And district 89 in my illustrative maps is drawn as one of two districts drawn wholly within Norfolk, and in a fashion that allows district 80 to be drawn wholly within Portsmouth, rather than split as in the NAACP map. While the black voting age population has not changed much, the process by which the district was created has changed greatly. Moreover, there can be no dispute that